Rhinorchis (Orchidaceae, Orchidoideae), a new neotropical genus highlighted from *Habenaria*[a]

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Abstract

In the present paper the new orchid genus *Rhinorchis* is described and illustrated. The new entity is separated from the neotropical genus *Habenaria* Willdenow, due to the differences in the structure of the rostellum showing a massive middle lobe. The corresponding new combinations are validated.

Résumé

Rhinorchis* (Orchidaceae, Orchidoideae), un nouveau genre néotropical extrait de *Habenaria – Cet article décrit et illustre le nouveau genre *Rhinorchis*. Cette entité est séparée du genre néotropical *Habenaria* Willdenow du fait de différences dans la structure du rostellum, qui exhibe un lobe médian massif. Les combinaisons correspondantes sont validées.

Introduction

Habenaria Willdenow is the central genus in the subtribe Habenariinae. The genus is distributed almost all over the world, especially in tropics. It includes about 1500-2500 species, depending on the author. Since Kraenzlin's (1901) taxonomic revision, the first and hitherto the only ever published, but mostly out-dated, nobody has taken the trouble to revise the

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group. Some attempts have been undertaken by my team in the beginning of 2000th (Szlachetko, 2004; Szlachetko & Kras, 2003a-b; 2006a-f; Szlachetko, Kras & Mytnik, 2006; Kras & Szlachetko, 2008a-b; 2009; Margońska, Kras & Sawicka, 2009; Kras & Margońska, 2010).

Continuing former works leading towards a taxonomic revision of the Habenariinae, I propose below a new genus, *Rhinorchis*, separated from neotropical *Habenaria* Willdenow. This new genus is easily separable from *Habenaria* by the gynostemium, especially the rostellum structure, with its massive rostellum middle lobe (Fig. 1). In this respect it is somewhat similar to the African genus *Platycorynoides* Szlachetko (Fig. 1).

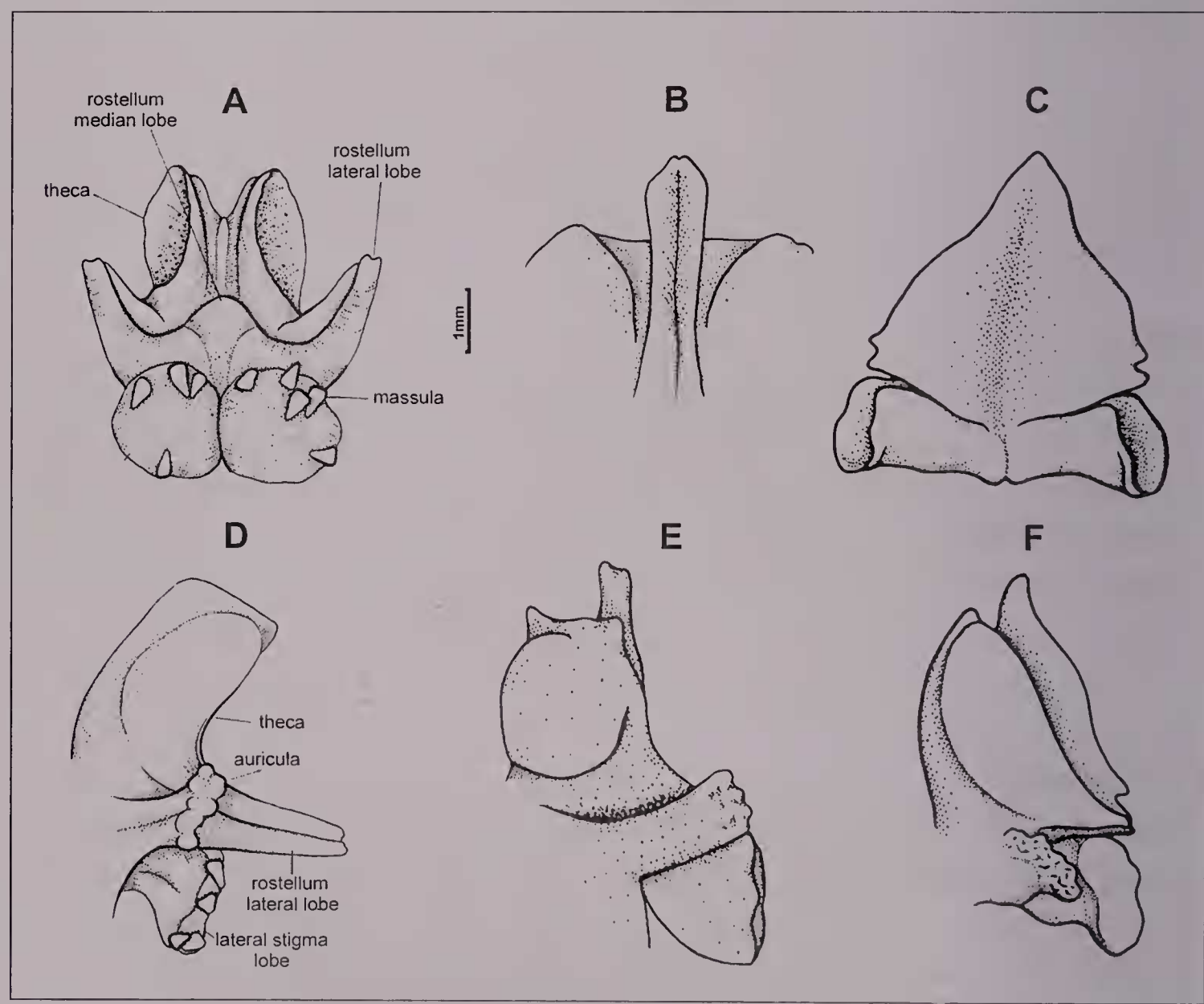

Fig. 1 : Comparison of the gynostemium structure
of *Habenaria* (A, D), *Rhinorchis* (B, E) and *Platycorynoides* (C, F)
A, B, C – gynostemium front view; D, E, F – gynostemium side view.

Materials and methods

The results presented here are based on the examination of the herbarium specimens of Habenariinae and material collected during field expeditions carried out by Szlachetko in 1997, 1999, 2005, 2007, 2008, 2011 and 2012 within the Neotropics. The total number of revised specimens oscillates around 3000. They were either on loan from or examined in the following institutions AAU, B, BM, C, CAY, COL, CUVC, F, G, K, M, MO, P, U, US and W.

Standard procedure of preparing the herbarium material to facilitate stereomicroscopic observation was applied. Particular parts of the flower were boiled, dissected, measured and drawn under a stereomicroscope. The results were then analyzed and compared with the type materials, diagnoses and original illustrations.

Synopsis

Rhinorchis Szlachetko, *gen. nov.*

Rhinorchis differs from all other neotropical members of the Habenariinae by the peculiar rostellum structure, especially massive rostellum middle lobe placed in front of the anther connective. In this respect it reminds the African genus Platycorynoides Szlachetko.

Generitype: *Habenaria mattogrossensis* Kraenzlin (=*Rhinorchis mattogrossensis* (Kraenzlin) Szlachetko).

Etymology: An allusion to the size and position of the middle rostellum lobe, reminding a horn of rhino.

Tuber single, ellipsoid to ovoid. Leaves cauline, lanceolate to linear, erect, decreasing in size upwards, gradually transform into the floral bracts. Inflorescence usually laxly few- to many-flowered. Flowers resupinate, medium-sized to small. Sepals dissimilar. Petals broadly connate with the lip margins, bilobed distinctly above the base; anterior lobe filiform, longer than the posterior one, sometimes short, erect, often deflexed; posterior lobe usually wide, lanceolate-ovate, adnate to the dorsal sepal forming a galea. Lip 3-lobed above the basal third or quarter, lobes dissimilar. Spur filiform to narrowly cylindrical, gently swollen towards the apex (Fig. 2). Gynostemium short, massive. Anther short and massive, ovoid to ellipsoid.

Antherophores short, joined to equal rostellophores. Pollinia ellipsoid to obovoid, longer than filiform caudiculae. Auriculae prominent, short, massive, sculptured. Stigmaphores slightly longer than antherophores and rostellophores, ligulate to clavate. Rostellum medium lobe triangular-subulate, massive, exceeding the anther, placed in front of the connective. Rostellophores crescentiform, usually touching each other apically. Viscidia 2, rather massive, often joined together.
The genus includes about 20 species, known mostly from Brazil, but also from other regions of South and Central America.

Rhinorchis caldensis (Kraenzlin) Szlachetko, *comb. nov.*
Basionym: *Habenaria caldensis* Kraenzlin, *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 16: 128 (1893)
Peru, Venezuela, Brazil, Guyana, Surinam. Alt. up to 2500 m.

Rhinorchis dusenii (Schlechter) Szlachetko, *comb. nov.*
Basionym: *Habenaria dusenii* Schlechter, *Repertorium Specierum Novarum Regni Vegetabilis* 16: 251 (1919)
Venezuela, Surinam, French Guyana, Brazil. Alt. up to 300 m.

Rhinorchis ekmaniana (Kraenzlin) Szlachetko, *comb. nov.*
Basionym: *Habenaria ekmaniana* Kraenzlin, *Kungliga Svenska Vetenskapsakademiens Handlingar* 46(10): 15 (1911)
Brazil, Paraguay, Argentina.

Rhinorchis ernestii (Schlechter) Szlachetko, *comb. nov.*
Basionym: *Habenaria ernestii* Schlechter, *Notizblatt des Koniglichen botanischen Gartens und Museums zu Berlin* 6: 122 (1914)
Venezuela, Guyana. Alt. 1700 m.

Rhinorchis glazioviana (Kraenzlin) Szlachetko, *comb. nov.*
Basionym: *Habenaria glazioviana* Kraenzlin *ex* Cogniaux *in* Martius, *Flora Brasiliensis* 3(4): 84 (1893)
Brazil.

Rhinorchis heringeri (Pabst) Szlachetko, *comb. nov.*
Basionym: *Habenaria heringeri* Pabst, *Orquidea* 29: 5 (1967)
Brazil.

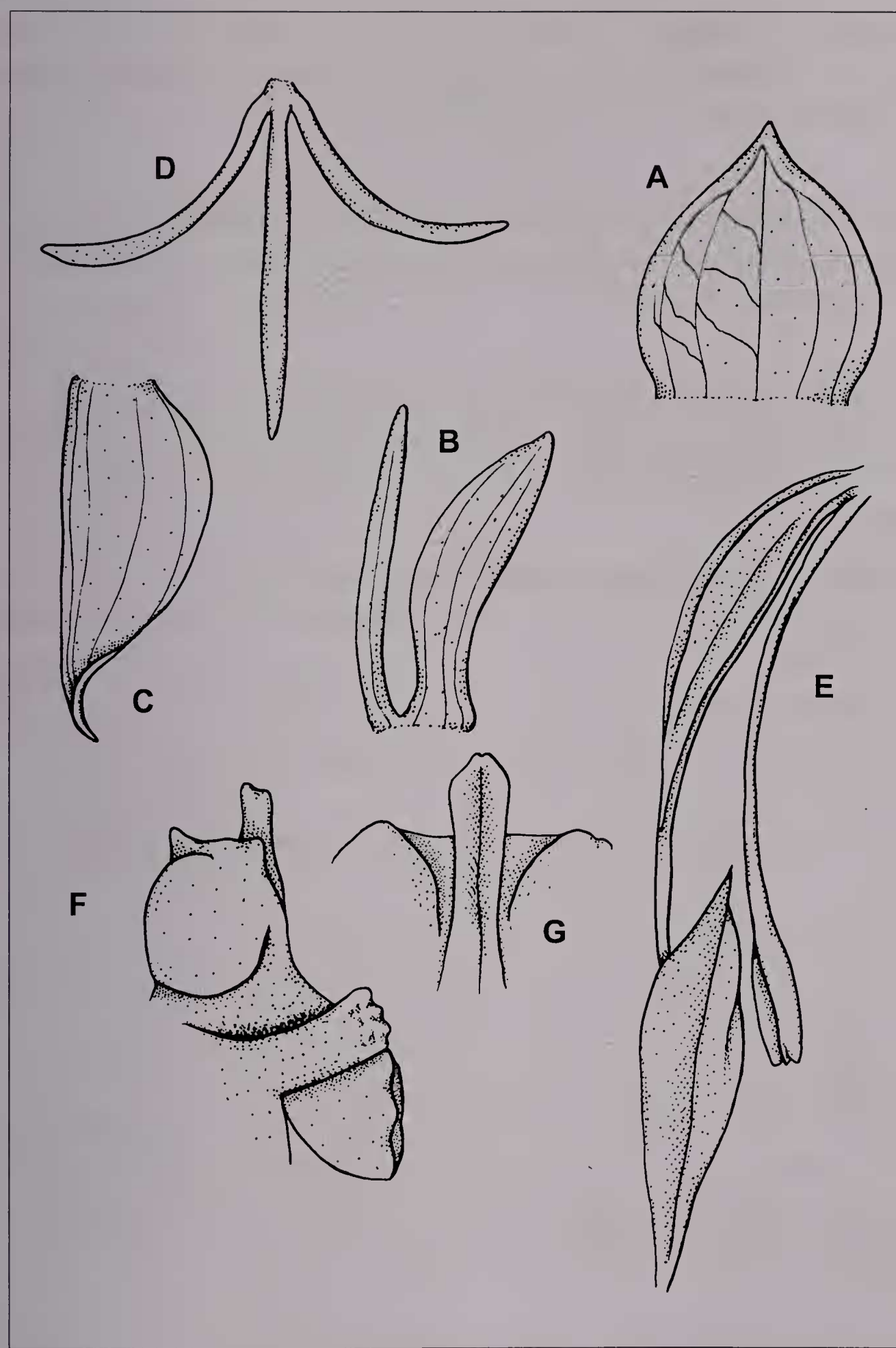

Fig. 2. *Rhinorchis trifida* (Humboldt, Bonpland & Kunth) Szlachetko
A – dorsal sepal; B – petal; C – lateral sepal; D – lip; E – spur, pedicel, ovary and floral bract; F – gynostemium; G – rostellum middle lobe.

Rhinorchis jaguariahyvae (Kraenzlin) Szlachetko, *comb. nov.*
Basionym: *Habenaria jaguariahyvae* Kraenzlin, *Kungliga Svenska Vetenskapsakademiens Handlingar* 46(10): 13 (1911)
Brazil.

Rhinorchis kuhlmannii (Schlechter) Szlachetko, *comb. nov.*
Basionym: *Habenaria kuhlmannii* Schlechter, *Beihefte zum Botanischen Centralblatt* 42(2): 72 (1925)
Brazil.

Rhinorchis lagunae-sanctae (Kraenzlin) Szlachetko, *comb. nov.*
Basionym: *Habenaria lagunae-sanctae* Kraenzlin, *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 16: 119 (1893)
Brazil.

Rhinorchis leaoana (Schlechter) Szlachetko, *comb. nov.*
Basionym: *Habenaria leaoana* Schlechter, *Beihefte zum Botanischen Centralblatt* 42(2): 72 (1925)
Venezuela, Guyana, Brazil.

Rhinorchis longipedicellata (Hoehne) Szlachetko, *comb. nov.*
Basionym: *Habenaria longipedicellata* Hoehne, *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 68: 133 (1938)
Brazil.

Rhinorchis macilenta (Lindley) Szlachetko, *comb. nov.*
Basionym: *Bonatea macilenta* Lindley, *The London Journal of Botany* 2: 673 (1843)
Guyana, Surinam, French Guiana, Brazil.

Rhinorchis magniscutata (Catling) Szlachetko, *comb. nov.*
Basionym: *Habenaria magniscutata* Catling, *Taxon* 36(4): 760 (1987), *nom. nov. pro Habenaria rostrata* Pabst, Anais da Sociedade Botanica do Brasil: 11. 1964, *non Habenaria rostrata* Wallich *ex* Lindley, *Genera and Species of Orchidaceous Plants*: 325 (1835)
Brazil.

Rhinorchis mattogrossensis (Kraenzlin) Szlachetko, *comb. nov.*
Basionym: *Habenaria mattogrossensis* Kraenzlin, *Kungliga Svenska Vetenskapsakademiens Handlingar* 46(10): 14 (1911)
Brazil.

Rhinorchis megapotamensis (Hoehne) Szlachetko, *comb. nov.*
Basionym: *Habenaria megapotamensis* Hoehne, *Arquivos de Botânica do Estado de S. Paulo*, n.s., 1: 41 (1939)
Brazil.

Rhinorchis nilssonii (Foldats) Szlachetko, *comb. nov.*
Basionym: *Habenaria nilsonii* Foldats, *Boletin de la Sociedad Venezolana de Ciencias Naturales* 22: 256 (1961)
Venezuela. Alt. 1200 m.

Rhinorchis pauciflora (Lindley) Szlachetko, *comb. nov.*
Basionym: *Bonatea pauciflora* Lindley, *Genera and Species of Orchidaceous Plants*: 328 (1835)
Habenaria pauciflora (Lindley) Reichenbach f., *Bonplandia* 2: 10, sub. 3 (1854)
From Mexico, through Guatemala, Honduras and Panama to French Guiana, Peru, Brazil, Paraguay and Argentina. Alt. up to 1800 m.

Rhinorchis pickelii (Hoehne) Szlachetko, *comb. nov.*
Basionym: *Habenaria pickelii* Hoehne, *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 48: 129 (1938)
Brazil.

Rhinorchis santensis (Barbosa Rodrigues) Szlachetko, *comb. nov.*
Basionym: *Habenaria santensis* Barbosa Rodrigues, *Genera et Species Orchidearum Novarum* 2: 253 (1882)
Brazil.

Rhinorchis schomburgkii (Lindley *ex* Bentham) Szlachetko, *comb. nov.*
Basionym: *Habenaria schomburgkii* Lindley *ex* Bentham, *The London Journal of Botany* 2: 673 (1843)
Venezuela, Guiana, Surinam, Brazil. Alt. 1150 m.

Rhinorchis trifida (Humboldt, Bonpland & Kunth) Szlachetko, *comb. nov.*
Basionym: *Habenaria trifida* Humboldt, Bonpland & Kunth, *Nova Genera et Species Plantarum* 1: 330 (1816)
From Mexico to Costa Rica, Panama, Peru, Ecuador, Colombia, Venezuela, Guyana, Surinam, French Guiana, Brazil, Bolivia, Paraguay and Argentina.

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